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I, ANNA MAIJA EVERETT, ACTING TEAM LEADER EXAMINATION SUPPORT & SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. PQ 1493 for a patent by WEEKS PEACOCK QUALITY HOMES PTY LTD filed on 07 July 1999.

WITNESS my hand this
Thirteenth day of July 2000



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AUSTRALIA

Patents Act 1990

PROVISIONAL SPECIFICATION

APPLICANT: WEEKS PEACOCK QUALITY HOMES PTY LTD
NUMBER:
FILING DATE:

Invention Title: METHOD OF FORMING A TUBE

The invention is described in the following statement:-

"METHOD OF FORMING A TUBE"TECHNICAL FIELD

5 This invention relates to method of forming a tube.

BACKGROUND ART

10 It is known to form a tube by taking an elongate
sheet of material having a pair of spaced and parallel
lateral edges and bending the material about a
longitudinal axis so that the lateral edges abut or
overlap so as to form a tube. Thereafter, the abutting
or overlapping lateral edges are fixed together, usually
15 by welding.

The present invention relates to a novel method of
fixing together overlapping lateral edges during
formation of a tube, and to a tube thus formed.

20 DISCLOSURE OF INVENTION

According to one aspect the invention resides in a
method of forming a tube from an elongate sheet of
material having a pair of spaced and parallel edges, the
25 method including:-

forming the elongate sheet into a tube such that the
lateral edges of the sheet overlap to define an overlap
region having an inner overlap portion and an outer
overlap portion;

30 punching the inner overlap portion and outer overlap
portion to define a tab in each, said tabs being aligned
such that the tab defined in the inner portion is
directly underneath the tab defined in the outer portion;
and

35 folding the tabs whereby the inner overlap portion
and outer overlap portion are fixed together.

According to another aspect, the invention resides
in a tube formed according to the method defined above.

According to another aspect the invention resides in a tube manufactured from an elongate sheet of material formed into a tube and having its lateral edges overlapping to define an inner overlapping portion and an outer overlapping portion, a tab defined in the inner overlapping portion, a tab defined in the outer overlapping portion, said tabs being aligned such that the tab defined in the inner overlapping portion lies directly beneath the tab defined in the outer overlapping portion, said tabs being folded such that the inner overlapping portion and outer overlapping portion are fixed together.

According to another aspect the invention resides in a tube or the like including:-

a longitudinally extending seam formed by overlapping opposed edges of sheet material forming the tube; and

fastening means for fastening together the overlapped edges, the fastening means being integrally formed by material punched from the overlapped edges.

According to another aspect the invention resides in a method of forming a tube or the like, the method including:-

bending sheet material about a longitudinal axis to overlap opposed edges of the material;

integrally fastening the overlapped edges by punching material from the overlapped edges.

BRIEF DESCRIPTION OF DRAWINGS

Reference will now be made to the accompanying Figures which illustrate preferred embodiment(s) of the invention and in which:-

FIG 1 is front elevation of a tube according to the invention;

FIG 2 is an underside plan of the tube of FIG 1;

FIG 3 is a side elevation with cutaway detail of the tube of FIG 1.

BEST MODE

With reference to FIG 1, there is shown a tube 10 formed from a sheet of material bent about a longitudinal axis such that the opposed lateral edges of the sheet of material overlap to define an overlapping region 12 whereat an outer overlapping portion 14 overlies an inner overlapping portion 16.

U or V-shaped tabs 18 are punched from the inner and outer overlapping portions and thereafter bent inwardly together to the position illustrated by 18' in FIG 3.

It will be understood that both the outer overlapping portion and inner overlapping portion are punched such that the tabs defined in the inner and outer portions abut each other and are bent in unison to the final interlocking position shown at 18' in FIG 3.

As shown, the punching and bending operation is repeated at regular centres along the longitudinal length of the tube such that the overlapping seam is stabilised along its entire length.

It will, of course, be realised that the above has been given by way of illustrative example(s) of the invention. Any variations, modifications, or omissions, as would be apparent to persons skilled in the art, are deemed to fall within the broad scope of this invention.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A method of forming a tube from an elongate sheet of material having a pair of spaced and parallel edges, the
5 method including:-

forming the elongate sheet into a tube such that the lateral edges of the sheet overlap to define an overlap region having an inner overlap portion and an outer overlap portion;

10 punching the inner overlap portion and outer overlap portion to define a tab in each, said tabs being aligned such that the tab defined in the inner portion is directly underneath the tab defined in the outer portion; and

15 folding the tabs whereby the inner overlap portion and outer overlap portion are fixed together.

2. A method as claimed in claim 1, wherein the tabs are folded inwardly.

20 3. A method as claimed in claim 1, wherein the tabs are substantially V or U shaped.

25 4. A method as claimed in claim 1, wherein the tabs are simultaneously punched.

5. A method as claimed in claim 1, wherein complementary pairs of tabs are provided along the length of the tube at regular centres.

30 6. A tube formed according to the method defined in any one of claims 1 to 5.

35 7. A tube manufactured from an elongate sheet of material formed into a tube and having its lateral edges overlapping to define an inner overlapping portion and an outer overlapping portion, a tab defined in the inner overlapping portion, a tab defined in the outer

overlapping portion, said tabs being aligned such that the tab defined in the inner overlapping portion lies directly beneath the tab defined in the outer overlapping portion, said tabs being folded such that the inner overlapping portion and outer overlapping portion are fixed together.

8. A tube as claimed in claim 7, wherein said tabs are folded inwardly.

9. A tube as claimed in claim 7, wherein said tabs are substantially V or U shaped.

10. A tube as claimed in claim 7, wherein complementary pairs of tabs are provided at regular centres along the length of the tube.

11. A tube or the like including:-

a longitudinally extending seam formed by overlapping opposed edges of sheet material forming the tube; and

fastening means for fastening together the overlapped edges, the fastening means being integrally formed by material punched from the overlapped edges.

12. A tube as claimed in claim 11, wherein the fastening means are tabs bent to abut the tube surface.

13. A method of forming a tube or the like, the method including:-

bending sheet material about a longitudinal axis to overlap opposed edges of the material;

integrally fastening the overlapped edges by punching material from the overlapped edges.

14. A method as claimed in claim 13, and further including:-

bending the punched material to abut the tube

surface.

ABSTRACT

A method of forming a tube involves the punching of tabs from an overlapping longitudinal seam and folding
5 the tabs to mechanically fix the opposed lateral edges of the sheet material forming the tube.

